application serial no. 08/861,457. Application serial no. 09/944,115, filed on September 4, 2001, is also a continuation of reissue application serial no. 08/861,457. Application serial no. 09/956,806, filed on September 21, 2001, is also a continuation of reissue application serial no. 08/861,457.

Please replace the paragraph beginning column 3, line 31 with the following:

Fig. 1d [11d] is a vertical cross section of an overshot-type tool used in case 1.

IN THE CLAIMS:

Please cancel claims 18, 28, and 36, amend claims 17, 19, 27, 35, and 38, and add new application claims 55-104.

17. A method of forming the intersection between a primary borehole and a secondary borehole comprising the steps of:

under-reaming a portion of the primary borehole at the location of the secondary borehole to be formed;

installing a joint assembly in the primary borehole at the location of the secondary borehole to be formed;

forming an opening in the joint assembly at the location of the secondary borehole to be formed, the opening being formed either prior to or after the joint assembly is installed;

extending a tubular member through the opening and into the under-reamed portion of the primary borehole;

drilling the secondary borehole through the extended tubular member; and

applying a settable material into the under-reamed portion of the primary borehole and about the joint assembly and the tubular member at the under-reamed portion.

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18 ~~19~~. The method of claim 17, wherein the secondary borehole is drilled through the extended tubular member after the settable material has hardened.

~~26~~ ~~27~~. A method of forming the intersection between a primary, cased borehole and a secondary borehole comprising the steps of:

removing a portion of the casing adjacent the location of the secondary borehole to be formed;

subsequently under-reaming the primary borehole at the removed portion of the casing;

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subsequently installing a joint assembly at the location of the secondary borehole to be formed, the joint assembly including a window formed either prior to or after the joint assembly is installed;

subsequently extending a tubular member through the window and into the under-reamed portion of the primary borehole;

drilling the secondary borehole through the window and the tubular member; and

applying a settable material into the under-reamed portion and about the tubular member and the joint assembly proximate the tubular member.

33 ~~35~~. A method of forming a second borehole from first well bore comprising the steps of:

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enlarging a section of the first well bore at the subterranean location where the second borehole is to be formed;

providing a joint assembly changeable from a first position wherein the joint assembly is in a retracted position and is of a size and shape to pass through the well bore, to a second position wherein at least a portion of the joint assembly expands and extends into the enlarged section of the well bore;

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running the joint assembly through the well bore to the enlarged section of the well bore while maintaining the joint assembly in the first position;

causing the joint assembly to expand to the second position;

drilling a second borehole along a path defined by the joint assembly when in the second position; and

applying a settable material into the enlarged section of the well bore and about the joint assembly.

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~~38.~~ 35 The method of claim ~~37~~ 34, wherein the joint assembly is hung from the casing above the enlarged section of the well bore.

~~55.~~ 52 A method of forming the intersection between a primary borehole and a secondary borehole comprising the steps of:

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under-reaming a portion of the primary borehole at the location of the secondary borehole to be formed;

installing a joint assembly in the primary borehole at the location of the secondary borehole to be formed;

forming an opening in the joint assembly at the location of the secondary borehole to be formed, the opening being formed either prior to or after the joint assembly is installed;

extending a tubular member through the opening and into the under-reamed portion of the primary borehole, wherein the tubular member has an end shaped so as to cooperate with the inner edge of the opening; and

drilling the secondary borehole through the extended tubular member.

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53 ~~56.~~ The method of claim ~~55~~ 52 further including the step of applying a settable material into the under-reamed portion of the primary borehole and about the joint assembly and the tubular member at the under-reamed portion.

54 ~~57.~~ The method of claim ~~56~~ 53, wherein the secondary borehole is drilled through the extended tubular member after the settable material has hardened.

55 ~~58.~~ The method of claim ~~55~~ 52, wherein the joint assembly has a preformed opening in the wall thereof.

56 ~~59.~~ The method of claim ~~55~~ 52, wherein the inner diameter of the tubular member is of sufficient diameter to allow the passage of well tools.

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57 ~~60.~~ The method of claim ~~55~~ 52 further comprising the step of injecting steam into at least one of the primary and secondary boreholes, to promote the production of oil from the wellbore.

58 ~~61.~~ The method of claim ~~55~~ 52 further comprising the step of removing any material in the joint assembly to open the joint assembly to its full bore at the intersection of the primary and secondary boreholes.

59 ~~62.~~ A method of forming the intersection between a primary borehole and a secondary borehole comprising the steps of:

under-reaming a portion of the primary borehole at the location of the secondary borehole to be formed;

installing a joint assembly in the primary borehole at the location of the secondary borehole to be formed;

forming an opening in the joint assembly at the location of the secondary borehole to be formed, the opening being formed either prior to or after the joint assembly is installed;

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extending a tubular member through the opening and into the under-reamed portion of the primary borehole, wherein the tubular member includes a flanged element larger than the opening;

positioning the flanged element in contact with the inner surfaces of the joint assembly at the edge of the opening ;and

drilling the secondary borehole through the extended tubular member.

60 ~~63~~. The method of claim 59 ~~62~~ further including the step of applying a settable material into the under-reamed portion of the primary borehole and about the joint assembly and the tubular member at the under-reamed portion.

61 ~~64~~. The method of claim 60 ~~63~~, wherein the secondary borehole is drilled through the extended tubular member after the settable material has hardened.

62 ~~65~~. The method of claim 59 ~~62~~, wherein the joint assembly has a preformed opening in the wall thereof.

63 ~~66~~. The method of claim 59 ~~62~~ further comprising the steps of urging the flanged element against the joint assembly.

64 ~~67~~. The method of claim 59 ~~62~~, wherein the inner diameter of the tubular member is of sufficient diameter to allow the passage of well tools.

65 ~~68~~. The method of claim 59 ~~62~~ further comprising the step of injecting steam into at least one of the primary and secondary boreholes, to promote the production of oil from the wellbore.

66 ~~69~~. The method of claim 59 ~~62~~ further comprising the step of removing any material in the joint assembly to open the joint assembly to its full bore at the intersection of the primary and secondary boreholes.

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~~70.~~ A method of forming the intersection between a primary borehole and a secondary borehole comprising the steps of:

under-reaming a portion of the primary borehole at the location of the secondary borehole to be formed;

installing a joint assembly in the primary borehole at the location of the secondary borehole to be formed;

forming an opening in the joint assembly at the location of the secondary borehole to be formed, the opening being formed either prior to or after the joint assembly is installed;

extending a tubular member through the opening and into the under-reamed portion of the primary borehole;

drilling the secondary borehole through the extended tubular member; and

removing any material in the joint assembly to open the joint assembly to its full bore at the intersection of the primary and secondary boreholes.

68 67
~~71.~~ The method of claim ~~70~~ further including the step of applying a settable material into the under-reamed portion of the primary borehole and about the joint assembly and the tubular member at the under-reamed portion.

69 68
~~72.~~ The method of claim ~~71~~, wherein the secondary borehole is drilled through the extended tubular member after the settable material has hardened.

70 67
~~73.~~ The method of claim ~~70~~, wherein the joint assembly has a preformed opening in the wall thereof.

71 67
~~74.~~ The method of claim ~~70~~, wherein the tubular member has an end shaped so as to cooperate with the inner edge of the opening.

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72 67

~~75.~~ The method of claim ~~70~~, wherein the tubular member includes a flanged element larger than the opening, and the method further comprising the step of positioning the flanged element in contact with the inner surfaces of the joint assembly at the edge of the opening.

73 72

~~76.~~ The method of claim ~~75~~ further comprising the steps of urging the flanged element against the joint assembly.

74 67

~~77.~~ The method of claim ~~70~~, wherein the inner diameter of the tubular member is of sufficient diameter to allow the passage of well tools.

75 67

~~78.~~ The method of claim ~~70~~ further comprising the step of injecting steam into at least one of the primary and secondary boreholes, to promote the production of oil from the wellbore.

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~~79.~~ A method of forming the intersection between a primary, cased borehole and a secondary borehole comprising the steps of:

removing a portion of the casing adjacent the location of the secondary borehole to be formed;

subsequently under-reaming the primary borehole at the removed portion of the casing;

subsequently installing a joint assembly at the location of the secondary borehole to be formed, the joint assembly including a window formed either prior to or after the joint assembly is installed;

subsequently extending a tubular member through the window and into the under-reamed portion of the primary borehole, wherein the tubular member has an end shaped so as to cooperate with the inner edge of the window; and

drilling the secondary borehole through the window and the tubular member.

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77 ~~80.~~ The method of claim ~~79~~ 76 further comprising the step of applying a settable material into the under-reamed portion and about the tubular member and the joint assembly proximate the tubular member.

78 ~~81.~~ The method of claim ~~79~~ 76, wherein the window in the joint assembly is preformed and positioned at the under-reamed portion of the primary borehole.

79 ~~82.~~ The method of claim ~~79~~ 76, wherein the inner diameter of the tubular member is of sufficient diameter to allow the passage of well tools.

80 ~~83.~~ The method of claim ~~79~~ 76 further comprising the step of injecting steam into at least one of the primary and secondary boreholes, to promote production of oil from the wellbore.

81 ~~84.~~ The method of claim ~~79~~ 76 further comprising the step of removing any material in the joint assembly to reopen the joint assembly to its full bore at the intersection of the primary and secondary boreholes.

82 ~~85.~~ A method of forming the intersection between a primary, cased borehole and a secondary borehole comprising the steps of:

removing a portion of the casing adjacent the location of the secondary borehole to be formed;

subsequently under-reaming the primary borehole at the removed portion of the casing;

subsequently installing a joint assembly at the location of the secondary borehole to be formed, the joint assembly including a window formed either prior to or after the joint assembly is installed;

subsequently extending a tubular member through the window and into the under-reamed portion of the primary borehole, wherein the tubular member includes a flanged element larger than the window;

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positioning the flanged element in contact with the inner surface of the joint assembly at the edge of the window; and

drilling the secondary borehole through the window and the tubular member.

~~86.~~ 83 The method of claim ~~85~~ 82 further comprising the step of applying a settable material into the under-reamed portion and about the tubular member and the joint assembly proximate the tubular member.

~~87.~~ 84 The method of claim ~~85~~ 82, wherein the window in the joint assembly is preformed and positioned at the under-reamed portion of the primary borehole.

~~88.~~ 85 The method of claim ~~85~~ 82, wherein the inner diameter of the tubular member is of sufficient diameter to allow the passage of well tools.

~~89.~~ 86 The method of claim ~~85~~ 82 further comprising the step of injecting steam into at least one of the primary and secondary boreholes, to promote production of oil from the wellbore.

~~90.~~ 87 The method of claim ~~85~~ 82 further comprising the step of removing any material in the joint assembly to reopen the joint assembly to its full bore at the intersection of the primary and secondary boreholes.

~~91.~~ 88 A method of forming the intersection between a primary, cased borehole and a secondary borehole comprising the steps of:

removing a portion of the casing adjacent the location of the secondary borehole to be formed;

subsequently under-reaming the primary borehole at the removed portion of the casing;

subsequently installing a joint assembly at the location of the secondary borehole to be formed, the joint assembly including a window formed either prior to or after the joint assembly is installed;

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subsequently extending a tubular member through the window and into the under-reamed portion of the primary borehole;

drilling the secondary borehole through the window and the tubular member; and

removing any material in the joint assembly to reopen the joint assembly to its full bore at the intersection of the primary and secondary boreholes.

89 ~~92~~. The method of claim ~~91~~ 88 further comprising the step of applying a settable material into the under-reamed portion and about the tubular member and the joint assembly proximate the tubular member.

90 ~~93~~. The method of claim ~~91~~ 88, wherein the window in the joint assembly is preformed and positioned at the under-reamed portion of the primary borehole.

91 ~~94~~. The method of claim ~~91~~ 88, wherein the tubular member has an end shaped so as to cooperate with the inner edge of the window.

92 ~~95~~. The method of claim ~~91~~ 88, wherein the tubular member includes a flanged element larger than the window, the method further comprising the step of positioning the flanged element in contact with the inner surface of the joint assembly at the edge of the window.

93 ~~96~~ ~~95~~. The method of claim ~~91~~ 88, wherein the inner diameter of the tubular member is of sufficient diameter to allow the passage of well tools.

94 ~~97~~ ~~96~~. The method of claim ~~91~~ 88 further comprising the step of injecting steam into at least one of the primary and secondary boreholes, to promote production of oil from the wellbore.

95 ~~98~~ ~~97~~. A method of forming a second borehole from first well bore comprising the steps of:

enlarging a section of the first well bore at the subterranean location where the second borehole is to be formed;

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providing a joint assembly changeable from a first position wherein the joint assembly is in a retracted position and is of a size and shape to pass through the well bore, to a second position wherein at least a portion of the joint assembly expands and extends into the enlarged section of the well bore;

running the joint assembly through the well bore to the enlarged section of the well bore while maintaining the joint assembly in the first position;

causing the joint assembly to expand to the second position;

drilling a second borehole along a path defined by the joint assembly when in the second position; and

applying a settable material into the enlarged section of the well bore and about the joint assembly.

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96 ~~97~~ 95
~~98.~~ The method of claim ~~97~~, wherein the first well bore is cased, and the joint assembly is of the size and shape that it will pass through the cased well bore, when in the first position.

97 ~~100~~ 96
~~99.~~ The method of claim ~~98~~, wherein the joint assembly is hung from the casing above the enlarged section of the well bore.

98 ~~101~~ 95
~~100.~~ The method of claim ~~97~~ further comprising the step of installing liners through the joint assembly.

99 ~~102~~
~~101.~~ A method of forming a second borehole from first well bore comprising the steps of:

enlarging a section of the first well bore at the subterranean location where the second borehole is to be formed;

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providing a joint assembly changeable from a first position wherein the joint assembly is in a retracted position and is of a size and shape to pass through the well bore, to a second position wherein at least a portion of the joint assembly expands and extends into the enlarged section of the well bore;

running the joint assembly through the well bore to the enlarged section of the well bore while maintaining the joint assembly in the first position;

causing the joint assembly to expand to the second position;

drilling a second borehole along a path defined by the joint assembly when in the second position; and

installing liners through the joint assembly.

100 ~~103~~ 99 ~~102~~
~~102~~. The method of claim ~~101~~ further comprising the step of applying a settable material into the enlarged section of the well bore and about the joint assembly.

101 ~~104~~ 99 ~~102~~
~~103~~. The method of claim ~~101~~, wherein the first well bore is cased, and the joint assembly is of the size and shape that it will pass through the cased well bore, when in the first position.

102 ~~105~~ 101 ~~104~~
~~104~~. The method of claim ~~103~~, wherein the joint assembly is hung from the casing above the enlarged section of the well bore.

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